
Full HD 1080P WDR

Internet Protocol Camera

User's Manual

Ver.2012 / 06

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Reading Before Using

You should read all the safety and operating instructions before using this product. The use of surveillance devices may be prohibited by law in your country. The IP Camera is not only a high-performance web-ready camera, but can also be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

Warning Before Using



1. **Abnormal:** Power off the IP Camera immediately when the smoke or unusual odors are detected.
2. **Voltage:** Don not use the power supply with other voltages, if you use a power supply with different voltage than the one included with this device. It is likely to be damaged or damage other equipments / personnel.
3. **Humidity:** Keep the IP Camera dry inside. If it becomes wet, power off is necessary! Do not place it in high humidity environments.
4. **Temperature:** Refer to your user's manual for the operating temperature; do not place around heat sources, direct sunlight.
5. **Disassemble:** Do not open the housing of this IP Camera; avoid disassembling and inserting the sharp or tiny things.
6. **Accessory:** Do not use attachment / accessory not recommend by Raylios.

All warranty will be voided in the situations above.

Installation

It is important to first verify that all contents received are complete according to the package contents listed below. Carefully read and follow the instructions in the installation chapter to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended.

Package Content

Box Cam



* Lens not included

Vandal Dome



Fix Lens



Fix Lens IR



VF Lens



VF Lens IR

* accessory package is included

IR Tube



* accessory package is included

Power Adaptor



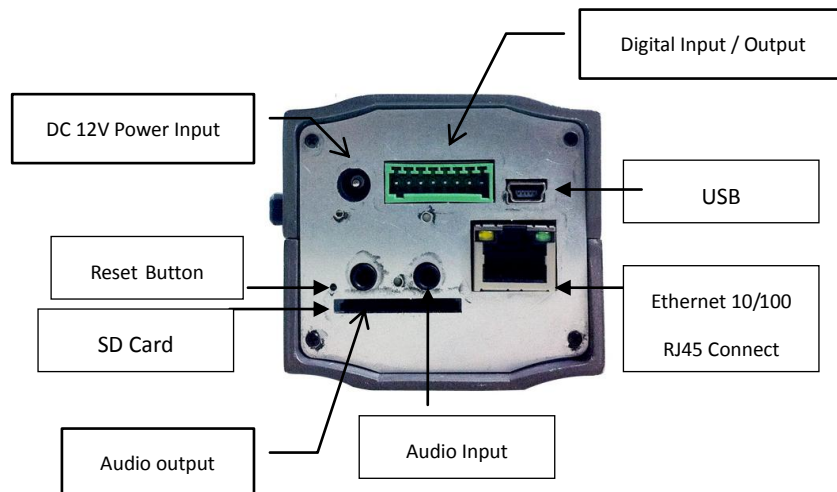
Software CD



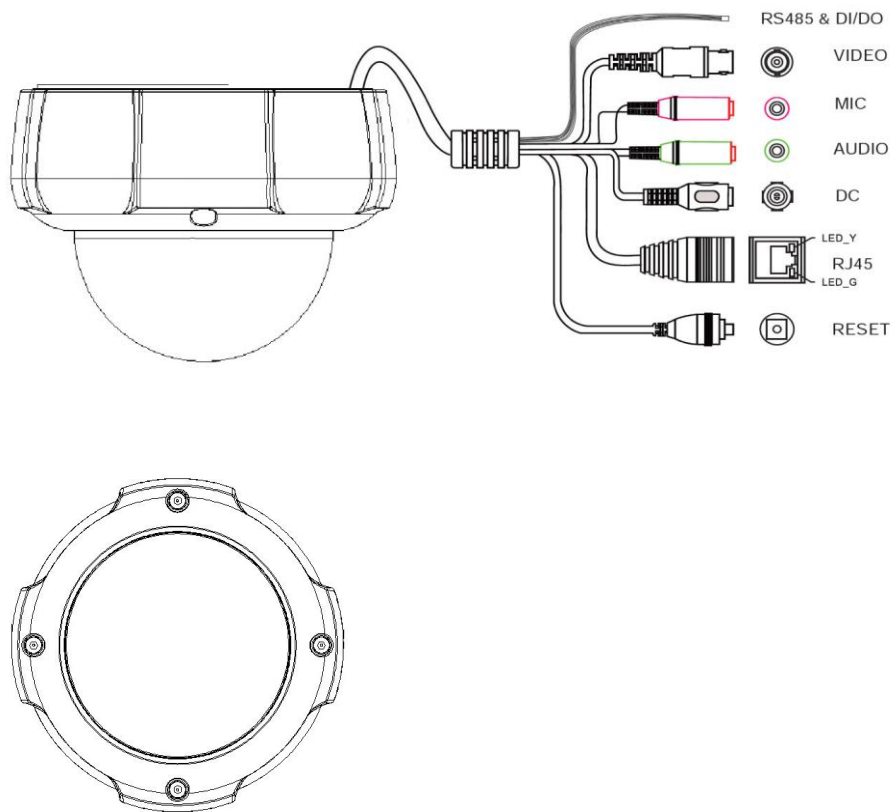
Physical Description

Box Cam

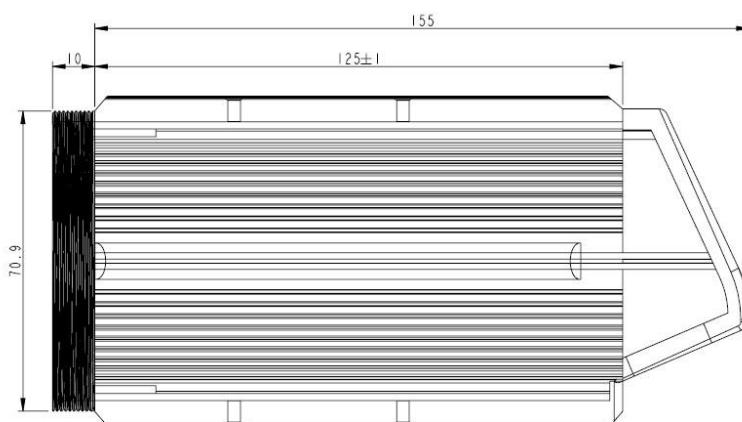
Rear Panel



Vandal Dome



IR Tube



The Hardware Interfaces

Ethernet Port

This IP Camera can be connected to the Ethernet via RJ-45 connector, and the network speed will be detected automatically. (10Base-T/100Base-TX Ethernet).

Reset Button

Press the reset button for a second (For Box Cam you may need a needle or a pen to reach the reset button)

The reset process will take about 15 seconds, but may be longer subject to the network environment.

Restore to Factory Default

Press the reset button for 8 second (For Box Cam you may need a needle or a pen to reach the reset button)

The reset process will take about 30 seconds, but may be longer subject to the network environment.

Audio Input / Output

The IP device supports audio input and output with earphone jack.

Digital Input / Output

Used in applications like motion detection, event triggering, time lapse recording, alarm notifications, etc., the I/O terminal connector provides the interface to:

1. Transistor output – for connecting external devices such as relays and LEDs.
Connected devices can be activated by Output buttons on the Live View page or through video management software.
2. Digital Input – An alarm input for connecting devices that can toggle between an open and closed circuit, for example: PIRs, door/window contacts, glass break

detectors, etc. The device will detect the change in digital input and transmit the signal to video surveillance servers.

◦

Mounting the Lens to the Camera

1. Mount the lens by turning clockwise onto the camera mount slowly until it stops.
2. Connect the Auto-Iris control cable to the socket (Auto-Iris lens only, optional)

Network & Basic Connecting

With PoE (Power Over Ethernet) supported switch or injector:

1. Connect IP Camera to the switch / injector by CAT 5 / CAT 6 network cable with RJ45 connector.
2. Connect your switch / injector to PC with another CAT5 / CAT6 network cable.

Without PoE (Power over Ethernet) supported switch or injector:

1. Connect the power adaptor to IP Box Camera.
2. Connect IP Camera to the switch / injector by CAT 5 / CAT 6 network cable with RJ45 connector.
3. Connect a PC to the switch / injector by CAT 5 / CAT 6 network cable with RJ45 connector.

Recommended PC Specification

CPU : Intel Core i3-2120 Dual Core 3.3GHz or above.

Memory : 2G or above (4G is suggested for a best performance)

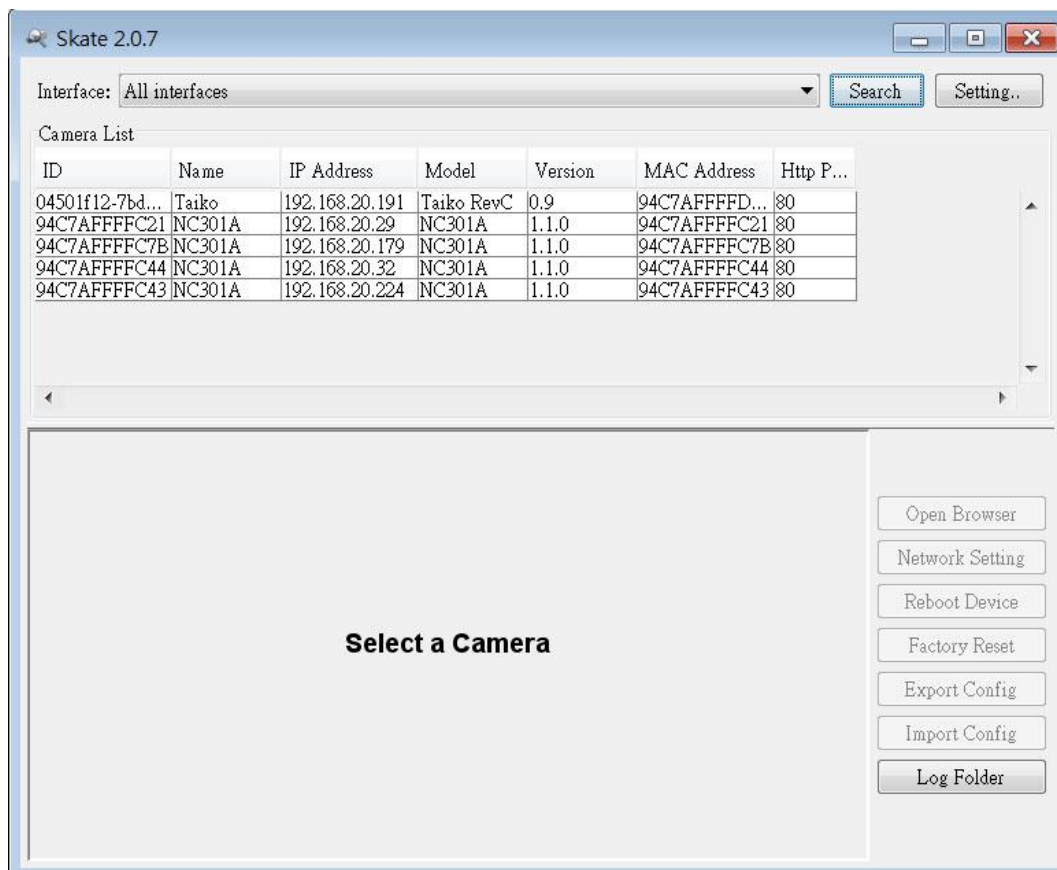
OS : Windows Vista,/2000/XP/ Win 7

Browser : Internet Explorer 7.0 or above (Also Support FireFox &Chrome)

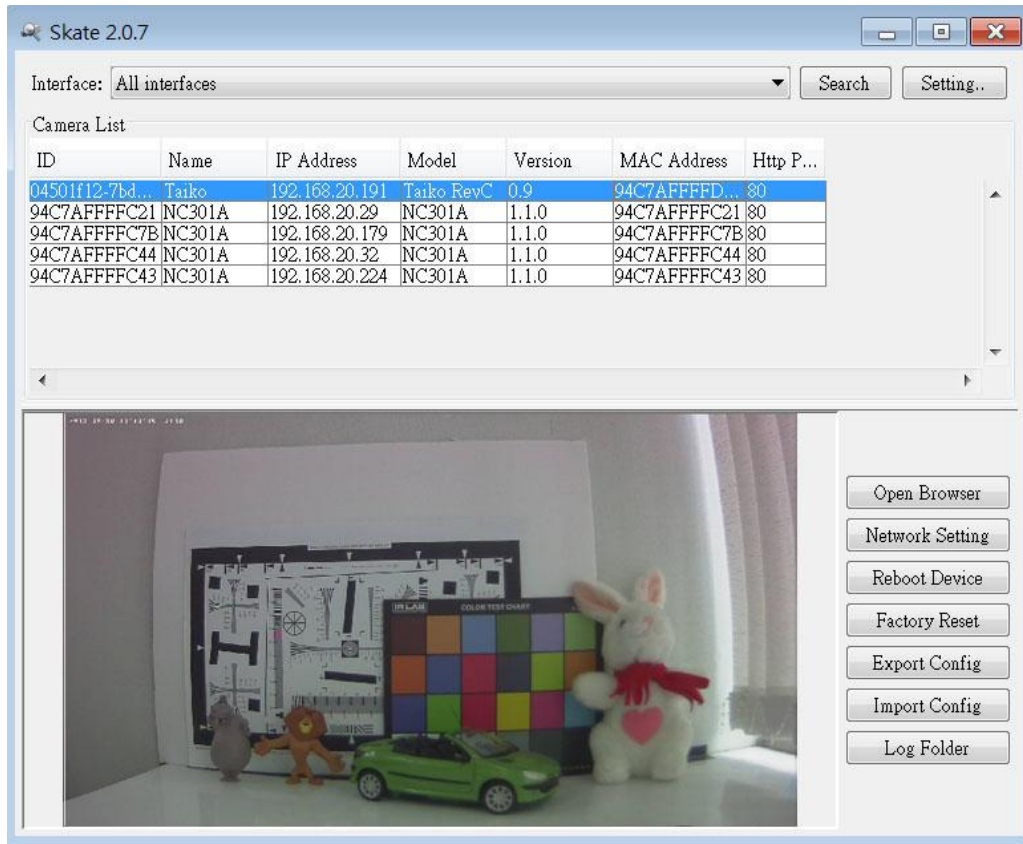
Accessing Camera

You can easily find and access the IP Camera with our “IP Camera Search Tool”, which is in our package CD with the camera.

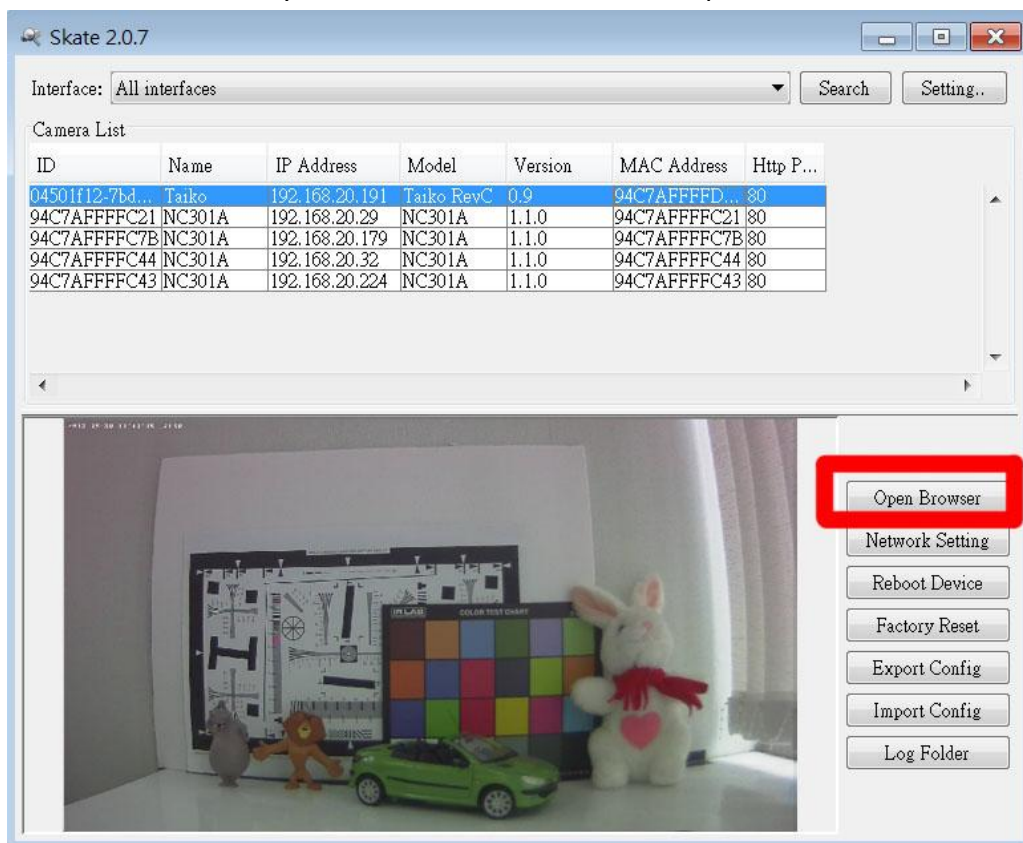
1. Put the CD into the CD/DVD player in your PC. The AutoRun will start automatically.
2. Click “IP Camera Search Tool”
3. If your PC can't execute AutoRun, please execute the program “autorun.exe” in the CD.
4. Click “Search”, the IP Cameras will be found with ID, Name, IP address...etc.



5. Select the IP Camera you would like to access. You should be able to see the video in the preview window.



6. Select the IP Camera you would like to access, click "Open Browser".



7. When you see the login window, please input default user name and password:

Default User name: admin

Password: password



The login window contains the following elements:

- Username:** A text input field containing the text "admin".
- Password:** A text input field containing seven dots ".....".
- Language:** A dropdown menu currently set to "English".
- Sign In:** A button to submit the login information.
- Stay signed in:** An unchecked checkbox next to the text "Stay signed in".

8. After logging in, you will see the video from camera. To go to the main menu, click the "Setup" button.

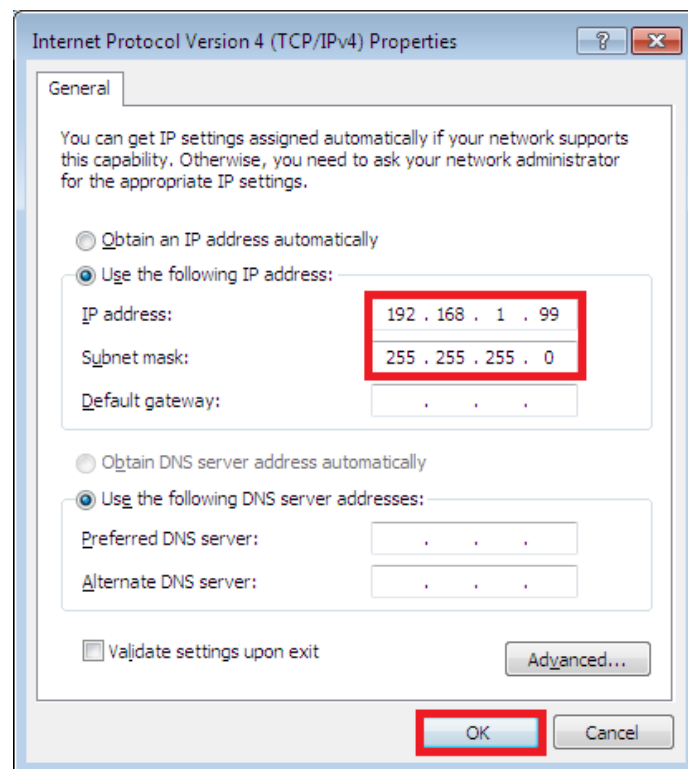


If you are using a single camera, this is enough to access the device.

If you are using multiple IP Cameras, repeat the above procedures.

If you can not access the camera after above mentioned procedure, you may have your PC with fixed IP, in this case please follow the steps to change the IP of IP Camera to the same subnet with your PC:

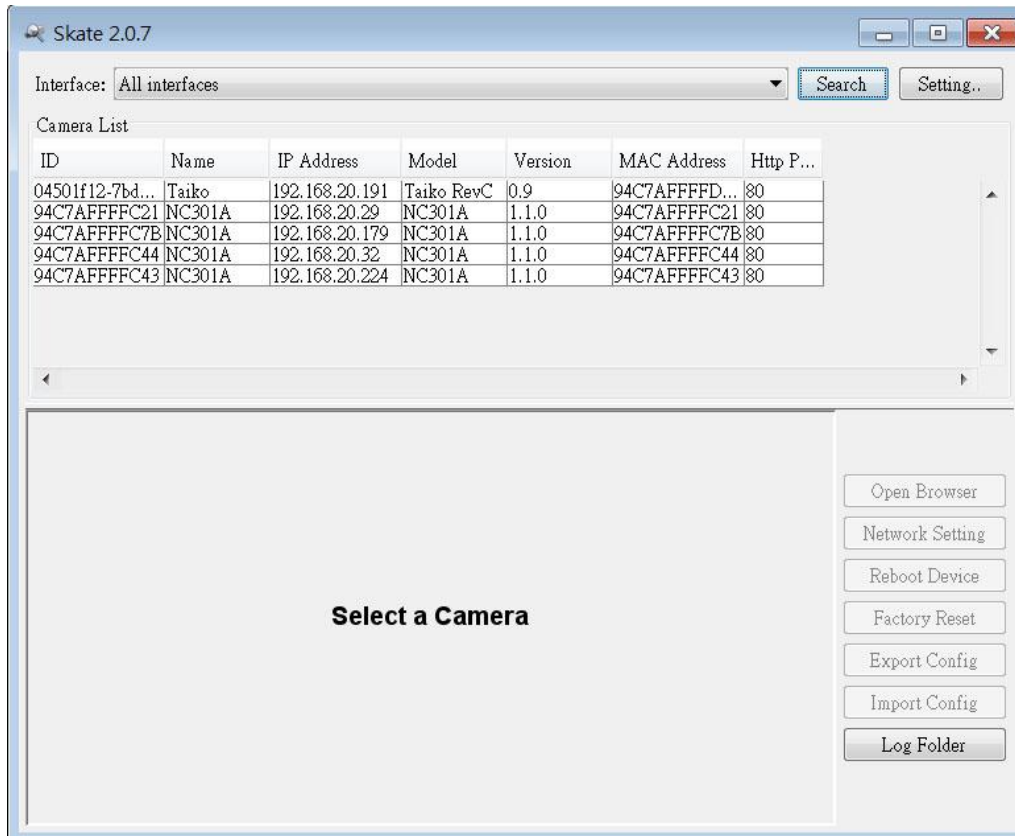
1. Check you PC's IP address by going to Control Panel → Manage Network Connections → Right click on the connection to change → Option → TCP/IP IPv4 Properties.
2. You can find your PC's IP address in the "IP Address" column. In our example it's 192.168.1.99 Please memorize it.



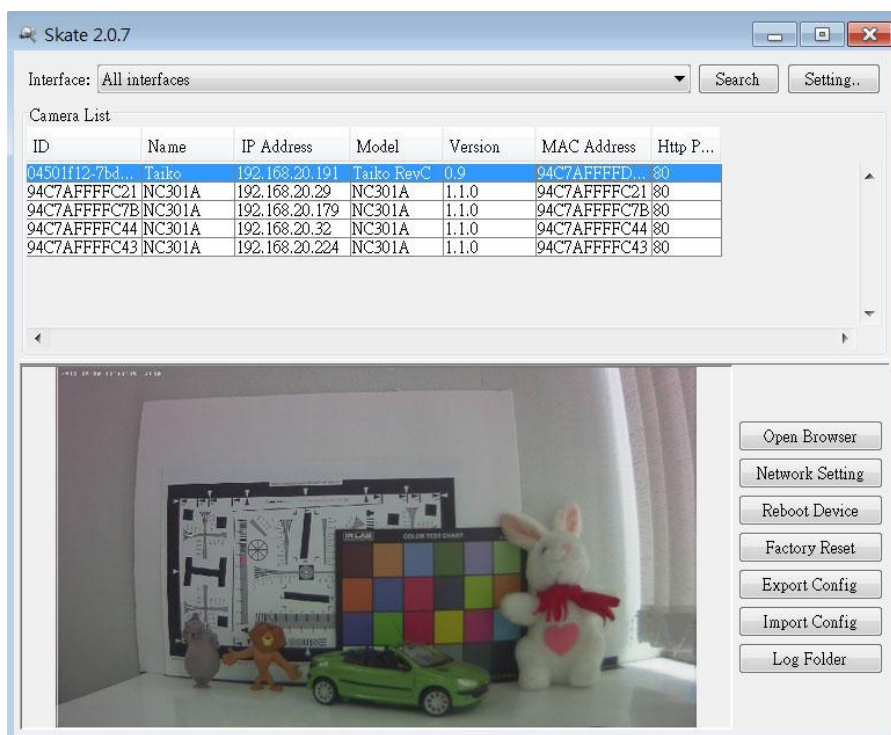
Select "OK"

3. Put the CD into the CD/DVD player in your PC. The AutoRun will start automatically.
4. Click "IP Camera Search Tool"
5. If your PC can't execute AutoRun, please execute the program "autorun.exe" in the CD.

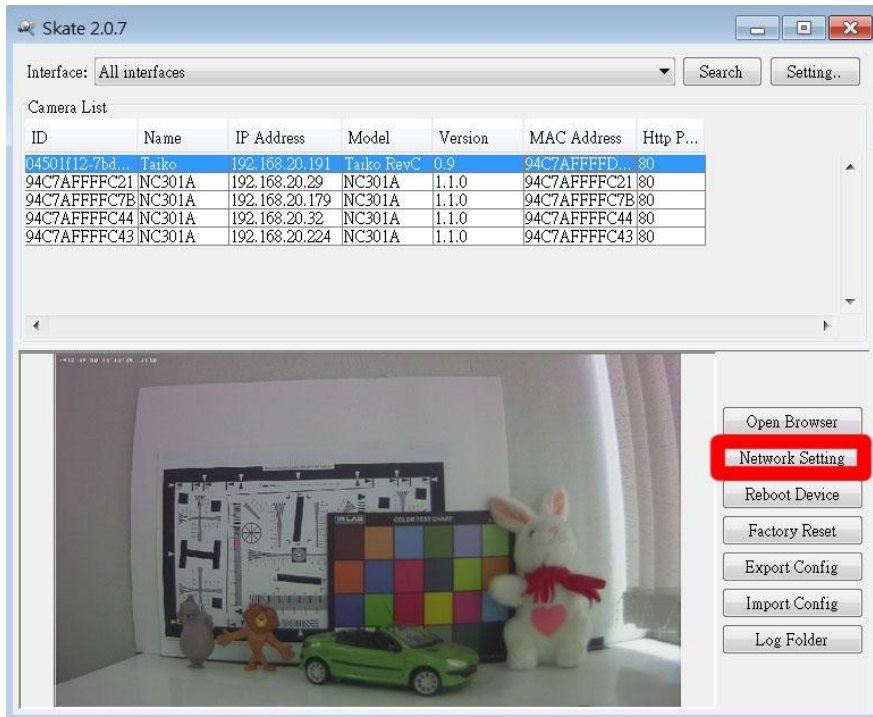
- Click "Search", the IP Cameras will be found with ID, Name, IP address...etc.



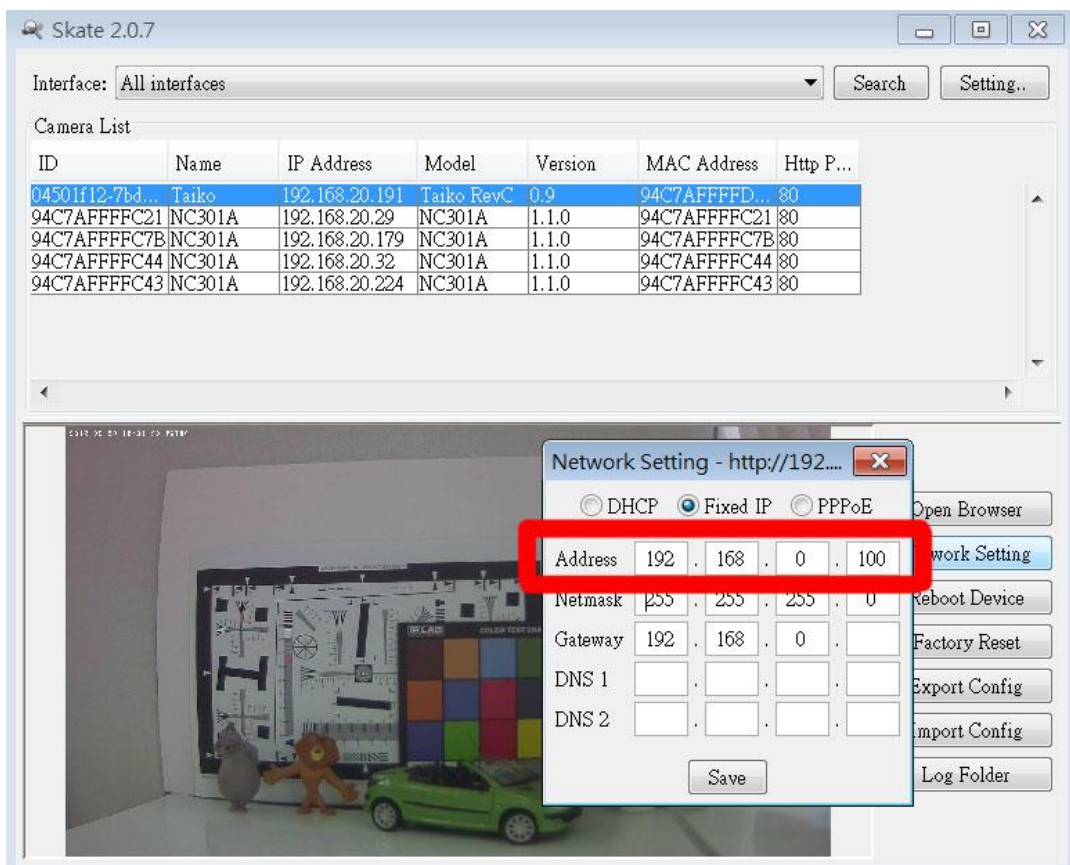
- Select the IP Camera you would like to access. You should be able to see the video in the preview window.



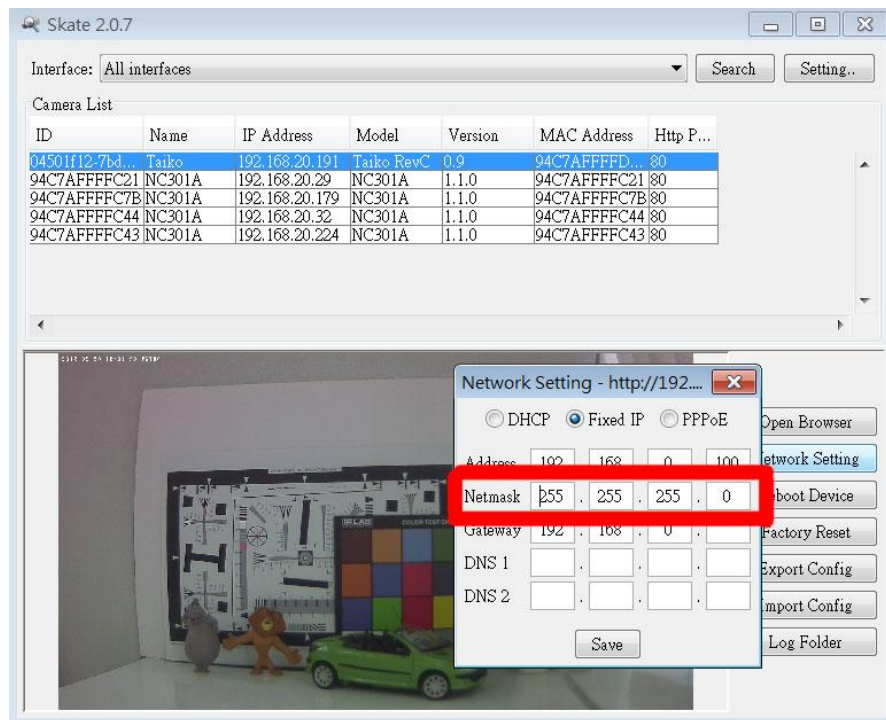
8. Click “Network Setting”, the click “OK”. The Network Setting Window will pop-up.



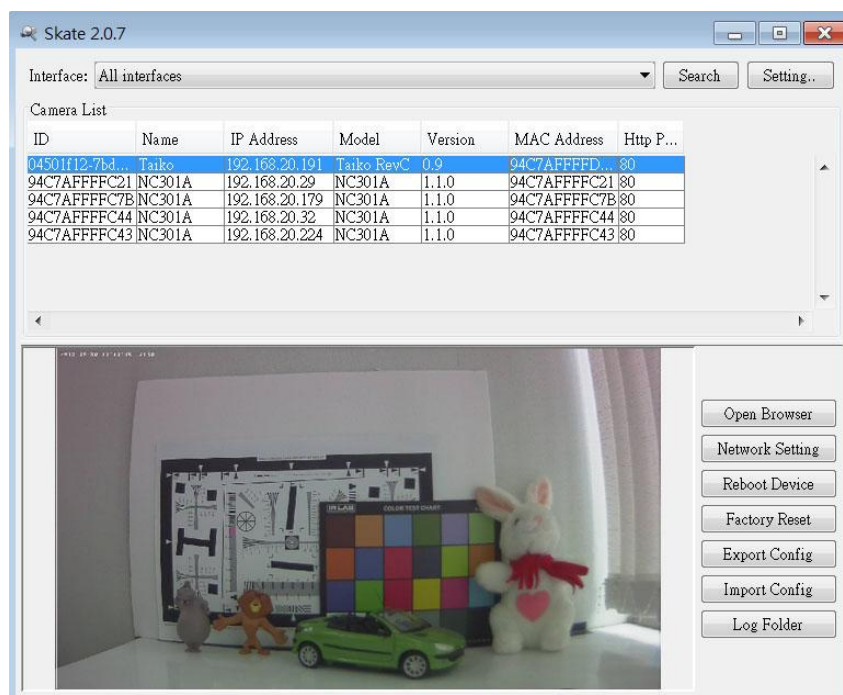
9. Select “Fixed IP”. Input the first 3 prefix as the same of your PC’s IP. In our example it’s 192.168.0. The last number should be any number from 1 to 254, except the one your PC’s IP is, in our example it’s 101.



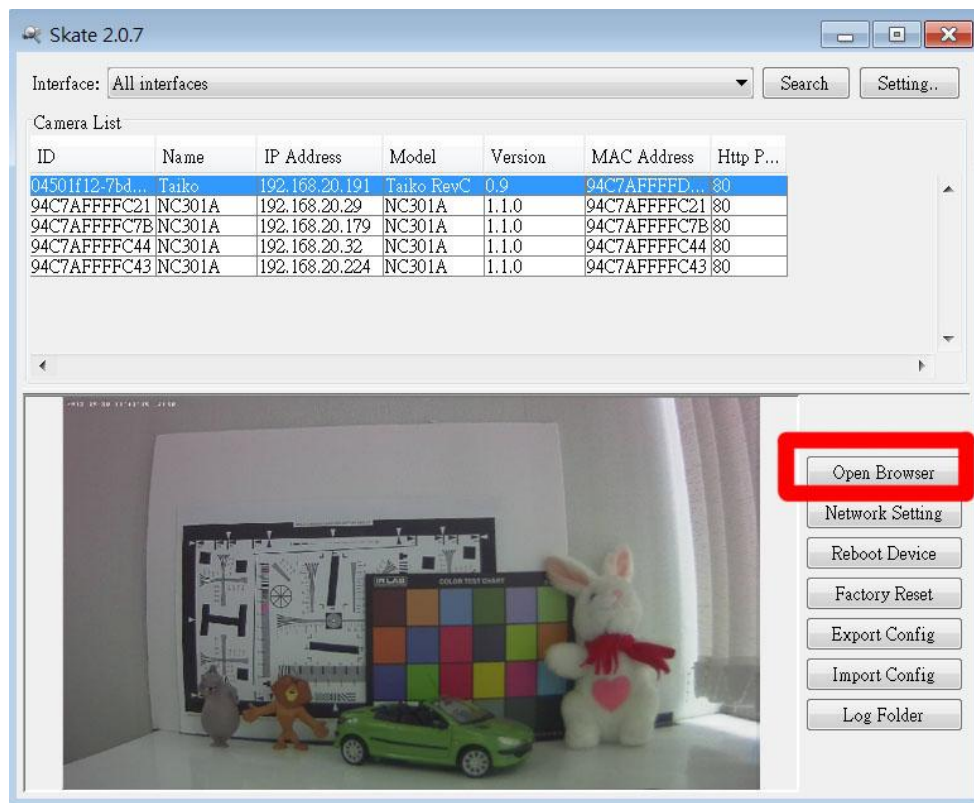
10. In “Netmask” column, input the prefix as the same of your PC’s Subnet Mask. In our example it’s 255.255.255.0
11. Input the Gateway number, please ask your MIS for it or check your PC in the same network. Then click “Save”.



12. Click “Search” again, you will find your camera with a new IP address which you assigned.
13. Select the IP Camera you would like to access. You should be able to see the video in the preview window.



14. Select the IP Cam you would like to access, click “Open Browser”.



15. When you see the login window, please input default user and password:

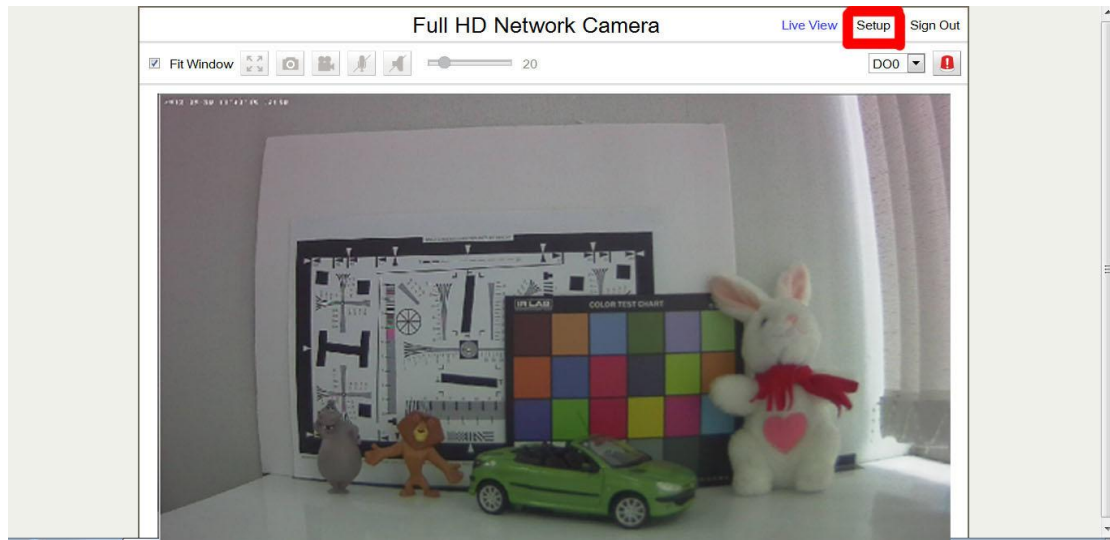
Default User name: admin

Password: password

The screenshot shows a login window with the following elements:

- Username:** A text input field containing the text 'admin'.
- Password:** A text input field with masked characters '.....'.
- Language:** A dropdown menu currently showing 'English'.
- Sign In:** A button to submit the login information.
- Stay signed in:** A checkbox that is currently unchecked.

16. After logging in, you will be able to see the live video. To go to the main menu, click the “Setup” button on the top.



Ready to Use

Access the IP Cam and be able to see the live video according to the procedures mentioned in this quick installation guide ◦

Operation Manual

A. Getting Start

Log-in IP Cam with your username and password

Default Username : admin

Default Password : password

Select "Stay signed in" if you want to access this IP Cam again without inputting username and password.

A login form with fields for Username (pre-filled with 'admin'), Password, and Language (set to 'English'). There is a 'Sign In' button and a checkbox for 'Stay signed in'.

B. Function Menu



1. Video Encode: You can select from the following Encode modes

- a. H.264(1920*1080)
- b. MJPEG(1920*1080)
- c. H.264-2(640*360)
- d. MJPEG-2(640*360)

2. Network Streaming : You can select from 1. TCP 2.UDP 3.HTTP

3. Fit Window : Adjust the image to fit the resolution of the monitor automatically

4. Full Screen : Click this button to switch to full screen mode. Click "ESC" key to switch back.

5. Snapshot : Click this button to capture and save still images.

6. Record : Click this button to record and save video clips, you can use Media Player or KM player for playing back videos.

7. MIC : Click this button to enable audio transmission to the IP Camera. Click again to stop audio transmission.

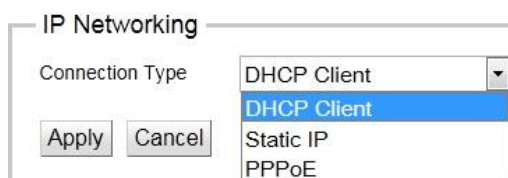
8. Speaker : Click this button to enable audio transmission from IP Camera to user. Click again to stop audio transmission.

9. Manual Trigger Digital Output : Select the DO you would like to trigger, then click the alarm icon.

C. Network Settings :

1. DHCP

By choosing DHCP, IP Camera can get IP automatically from Routers, Switches, DHCP servers which support DHCP. Users don't have to setup IP address, subnet mask and gateway. Users can use the Skate2 software in the CD-ROM (IP Camera search tool) to access the IP Cam. Please note the DHCP function is only valid in the local network, not in internet environment.

A screenshot of the IP Networking settings window. It shows a dropdown menu for 'Connection Type' with options: DHCP Client, Static IP, and PPPoE. The 'DHCP Client' option is selected. There are 'Apply' and 'Cancel' buttons.

2. Static IP

Please get the IP Address information from your Internet Service Provider (ISP), such as IP Address, Subnet Mask, Gateway IP. Input them and click “Apply” to complete setting. Before that, please make sure your internet connection is valid.

IP Networking

Connection Type

Static IP

IP Address

192.168.0.200

Subnet Mask

255.255.255.0

Gateway

192.168.0.1

DNS 1

168.95.1.1

DNS 2

168.95.192.1

Apply

Cancel

3. PPPoE

Get the PPPoE User Name and Password information from your Internet Service Provider (ISP), Input them and click “Apply” to complete setting. Please not, with PPPoE, the IP address may be changed from time to time subject to your ISP. You may need a DDNS service as well.

IP Networking

Connection Type

PPPoE

User Name

Password

Confirm

Apply

Cancel

4. DDNS

If you would like to use the DDNS service, please register first from the DDNS host such as www.dyndns.org. You will get Username and Password after registering. Enter them and click “Apply” to complete setting.

DDNS

Enable DDNS

☐

Hostname

Username

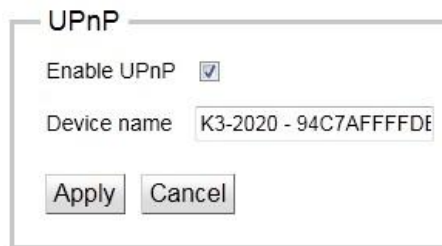
Password

Apply

Cancel

5. UPnP

By clicking “Enable UPnP”, allows this IP Cam to be an UPnP device in your network environment.



The UPnP configuration window has a title bar labeled 'UPnP'. It contains a checkbox labeled 'Enable UPnP' which is checked. Below it is a text field labeled 'Device name' containing the text 'K3-2020 - 94C7AFFFFDE'. At the bottom are two buttons: 'Apply' and 'Cancel'.

6. Bonjour

Bonjour is a protocol developed by Apple Inc. This protocol allow for easy searching of devices on network. By clicking “Enable Bonjour” allows this IP Cam to be searched automatically in the network.



The Bonjour configuration window has a title bar labeled 'Bonjour'. It contains a checkbox labeled 'Enable Bonjour' which is checked. Below it is a text field labeled 'Service name' containing the text 'K3-2020 - 94C7AFFFFDE'. At the bottom are two buttons: 'Apply' and 'Cancel'.

7. HTTP

The default HTTP port is 80.

Check box to enable JPEG streaming's Account/ Password authentication.

If you want to set up the session time out period, please select from the Session time out manual, you can select Never (the session will be kept all the time), 15min, 30min or 60min.



The HTTP configuration window has a title bar labeled 'HTTP'. It contains a text field labeled 'HTTP port' with the value '80'. Below it is a checkbox labeled 'JPEG Authorization' which is checked. Below that is a dropdown menu labeled 'Session time out' with 'Never' selected. At the bottom are two buttons: 'Apply' and 'Cancel'.

8. RTSP

The default RTSP port is 554.

The default RTSP client number is 6, you can change it according to how many clients are allowed to connect this IP Cam via RTSP.

Check box to enable RTSP streaming's Account/ Password authentication.

Check box to enable RTSP over HTTP.



The RTSP configuration window has a title bar with a minus sign. It contains four settings: 'RTSP Port' with a text box containing '554', 'RTSP Clients' with a text box containing '6', 'RTSP Authorization' with a checked checkbox, and 'RTSP over HTTP' with a checked checkbox. At the bottom are 'Apply' and 'Cancel' buttons.

9. RTP

The default RTP (over UDP) Port is 6000 (starting port), the IP Cam will use starting port + 100 ports for the RTP connections. Please contact your MIS to confirm which RTP ports are valid for IP Cam use.



The RTP configuration window has a title bar with a minus sign. It contains three settings: 'RTP Port' with a text box containing '6000', 'Multicast Address' with a text box containing '239.233.253.191', and 'Time to live' with a text box containing '5'. At the bottom are 'Apply' and 'Cancel' buttons.

9. IP Filter

Check box to enable IP Filter. You can build up Accept IP Address or Reject IP Address groups by selecting from the "Rule". Then input the IP Address you accept or reject in the columns blow, then click "+". After finishing all inputs, click "Apply".



The IP Filter configuration window has a title bar with a minus sign. It contains three settings: 'Enable IPFilter' with an unchecked checkbox, 'Rule' with a dropdown menu showing 'Accept', and 'Address' with a text box and a '+' button. Below the text box is a large empty rectangular area. At the bottom are 'Apply' and 'Cancel' buttons.

D. Camera Functions

1. Image Settings

Brightness 0

Contrast 128

Sharpness 64

Hue 0

Saturation 128

White Balance: Auto (dropdown menu open showing: Auto, Indoor, Outdoor, Hold, Manual)

R Gain 230

B Gain 230

Rotation ☒ Flip ☒ Mirror

2. Exposure

Flickerless: 60Hz

Exposure: 50Hz

Manual Shutter: 60Hz

Expansion: 6x

AGC 255

Auto Iris ☒ Calibration

BLC: Off Window

WDR ☐

Apply Factory Default Cancel

Flickerless: You can select from 50Hz, 60Hz and none according to your country's standard.

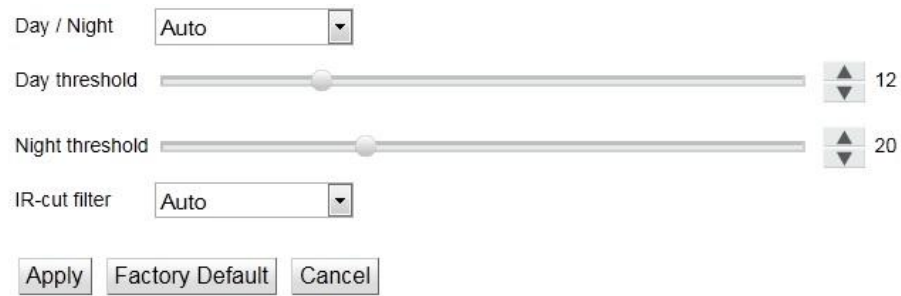
Exposure: you can select from Normal (Default setting), Long (you can select from 2x up to 6x exposure time), Manual (you can select from 1/25 up to 1/10000 sec. exposure time)

Auto Iris: Check box to enable Auto Iris function while you use an Auto Iris Lens. Make sure to click "calibration" while you are using a new lens, it will help to get the best performance of the lens. The calibration process will take 1-2 minutes.

BLC (Back Light Compensation): You can select from Off, Auto, Center or Manual. While selecting "Manual", click "Window" button to select an area (one out of 63 areas) you would like to have BLC.

WDR (Wide Dynamic Range): Check box to enable the WDR function.

3. Day/ Night



Day / Night

Day threshold 12

Night threshold 20

IR-cut filter

Day/ Night: You can select from Auto, Day (IR-Cut filter setup required), Night (IR-Cut filter setup required), Digital Input (Only if you have any Digital Input device connected to IP Cam), Schedule (have to input the Day to Night and Night to Day switch time)

Day threshold, Night threshold: could be adjusted according to the environment to get the best image quality.

IR-cut filter: you can select from Auto, On, Off according to the environment to get the best image quality.

4. Text Overlay



Text Overlay

Color

Date ☒

Time ☒

Text ☒

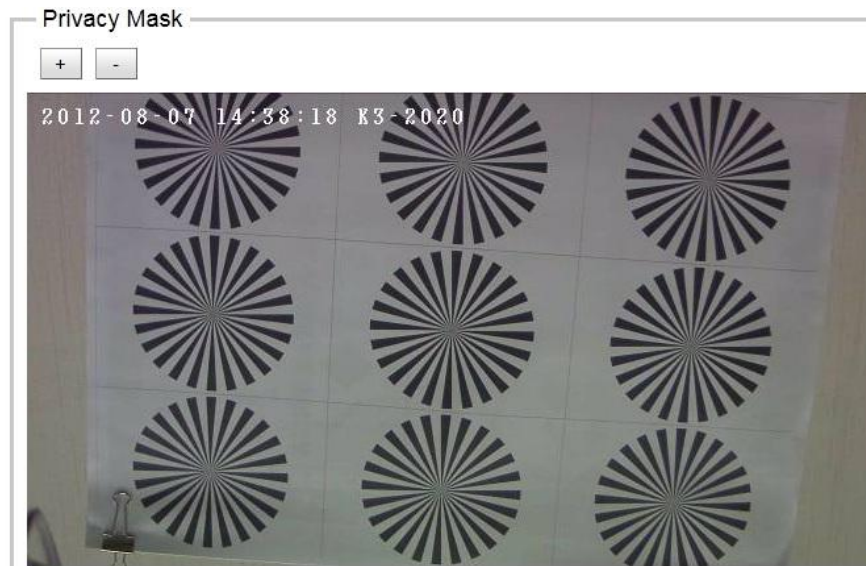
You can setup the text, date and time information, and its color on your web browser.

Check box "Text", you can input any character including = - / , : a~z A~Z 0~9. Max to 127 characters.

5. Privacy Mask

Click "+", then use mouse to drag a square on the screen, to where you would like to mask.

If you want to disable the privacy mask, click "-", then click the mask to disable it.



E. Media Settings

1. MJPEG : Select a configuration you would like to edit, then click "Edit". You can select the resolution, frame rate and quality according to your demand.

M-JPEG			
Configuration	Resolution	Frame Rate	Quality
1	1920x1080	30	70
2	640x360	30	70
Edit			

2.H.264 : Select a configuration you would like to edit, then click "Edit". You can select the Resolution, Frame rate, Bit rate type, Bit rate, Quality and GOP according to your demand.

Bit Rate Type: You can select from CBR (manually control the bit rate from 64K to 16M), VBR (manually control the quality from 1 to 100), or CVBR (Constraint Variable Bit Rate, which is a variable bit rate mode you can set an upper bit rate constraint)

H.264						
Configuration	Resolution	Frame Rate	Bit Rate Type	Bit Rate	Quality	GOP
1	1920x1080	30	CVBR	8M	80	30
2	640x360	30	CVBR	8M	80	30

3. Audio: you can select Codec type from G.711 a-law, G.711 u-law, and G.726 (Bit rate can be selected between 16K and 32K).

Audio

Codec type

Bit rate

Input gain 30

4. Profile

You can add a new profile by clicking “Add”, then input and select the configuration needed.

Profile

Name	Video Type	Configuration	URI	▲ Audio	Enable
M-JPEG	M-JPEG	Configuration1	mjpeg	Yes	Yes
M-JPEG-2	M-JPEG	Configuration2	mjpeg_2	Yes	Yes
H.264	H.264	Configuration1	h264	Yes	Yes
H.264-2	H.264	Configuration2	h264_2	Yes	Yes

F. Event

1. Event Servers: you can add new event servers by clicking “add”, then select the event server from FTP, E-Mail, HTTP and TCP. For the details information requested, please consult the server provider or ISP.

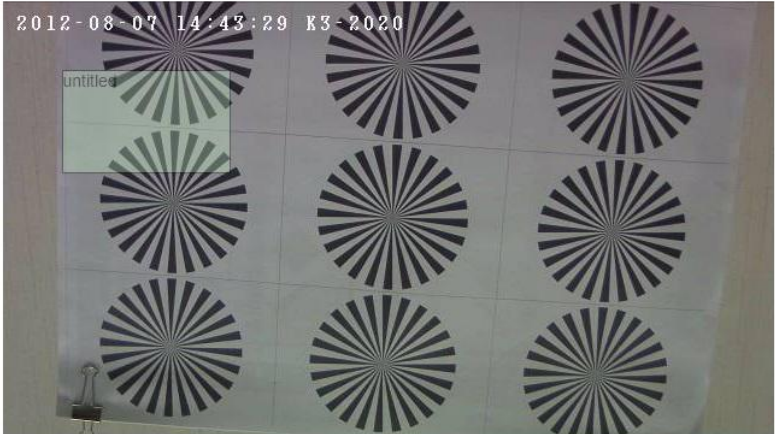
You can choose an existing Event server by clicking it, then you can duplicate, edit, rename or delete it.

2. Motion Setup : You can add a motion detection area by clicking “+”, then use the mouse to drag an area on the screen. You can name this area, and setup its sensitivity and threshold. If you want to disable any motion detection area, click “-” then click the area you would like to disable.

This IP Cam supports up to 3 motion detection areas enabled in parallel.

Motion Setup

+ -



2012-08-07 14:43:29 K3-2020

untitled

Enable ☐

Window Name

Sensitivity 1

Threshold 1

Status

Apply Cancel

3. Alarm I/O: This IP Cam supports up to 2 D/I and 2 D/O. If you connected any input/ output devices to this IP Camera you can configure them as below.

Alarm I/O

Port	Name	Normal State	▲ Current State
Input	input0	Open	Open
Input	input1	Open	Open
Output	output0	Open	Open
Output	output1	Open	Open

Edit

4. Definition : Here to let you define the event trigger method, trigger time, and the action you would like to have after the event is triggered.

Name:

▼ Trigger

Trigger by

Trigger Interval minute(s)

Working Time ☒ Disable ☐ Always ☐ Manual

Edit

▼ Action

- ▶ Activate output port
- ▶ Send E-mail notification
- ▶ Send HTTP notification
- ▶ Send TCP notification
- ▶ Upload images via FTP
- ▶ Upload images via E-mail
- ▶ Save images to SD card

G. Storage

1. SD Card : Suggest to use SDHC Class6 or above, 32GB SD Card.

SD Card 

Status Detached

Size N/A

Used N/A

 0



2. Cyclic : Check box “Percentage” to define the Max memory usage before overwriting the exiting recording. Check box “Duration” to define how many days’ recording to be kept in SD card.

Cyclic Setting 

Percentage ☐  95

Duration ☐ day(s)

3. Recording List : to show status of the recorded files, you can download, remove or lock it. While you lock any file, it will not be overwritten.

Recording List 

File Name	Size	Codec	Start Time	Stop Time	▲ Trigger	Lock
-----------	------	-------	------------	-----------	-----------	------

H. System

1. Information : to show the MAC Address, Model Name and Firmware Version of this IP Cam.
2. System Name : to let you setup the Title, Host Name and Domain Name of this IP Cam.
3. Email Server : to let you setup the SMTP server, you can choose from Gmail, Hotmail, Yahoo or to self-define other SMTP server.

E-mail Server

SMTP Server		User define ▼
Port	25	User define
Sender		GMail
		Hotmail
		Yahoo
Authentication	Off	▼
User Name		
Password		

4. Date & Time : to let you setup Date/ Time information, you can Sync with time servers or to input date/ time information manually.
5. Users : to let you add new users, and to group them into 3 levels for better security management, the 3 levels are Viewer, Operator and Administrator. Viewer can only access the live view video, Operator can access the live video and adjust the IP Cam basic settings. Administrator has a full authorization to access and configure this IP Cam.

Users

Users	▲ Group
admin	Administrator

Group

Username

Password

Confirm

6. Maintenance

Configuration : You can export or import the IP Cam configurations for easier duplicate the settings to other cameras. Click “Restore” to restore all the settings to factory default. If you want to keep the network settings, check box “Reserve network setting” before click “Restore”.

Reboot device : To reboot the IP Camera

Firmware Update : This function is only valid for the nominated firmware. Do not use other brand’s firmware, it will cause unexpected failure which is out of the warranty.

Logo : to let you upload your own logo. Logo format: PNG; Max. file size: 200*25.

Maintenance

Configuration ☐ Reserve network setting

Reboot device

Firmware Update

Logo (Maximum size: 200x25)

Logs : Click “Refresh” to get the latest log information. You can select from the following categories to check the system logs.

Logs

Log Level: ALL ▼

INFO
WARNING
ERROR
FATAL
ALL

Level	Time	Message
ERROR	2012.08.07 14:32:26	input Frame
ERROR	2012.08.07 14:32:26	RTP pcm
ERROR	2012.08.07 14:32:26	no free audio buffer
ERROR	2012.08.07 14:32:26	input Frame data fail
ERROR	2012.08.07 14:32:26	RTP pcma send failed
ERROR	2012.08.07 14:32:26	no free audio buffer
ERROR	2012.08.07 14:32:25	input Frame data fail
ERROR	2012.08.07 14:32:25	RTP pcma send failed
ERROR	2012.08.07 14:32:25	no free audio buffer
ERROR	2012.08.07 14:32:25	input Frame data fail

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